

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1 and 2. This sheet, which includes Fig. 1 and 2, replaces the original sheet including Fig. 1 and 2. Also, a sheet with new Claim 5 is added.

The attached sheet of drawings includes new Fig. 5.

Attachments: Replacement Sheet Fig. 1 and 2 and New Sheet Fig. 5

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-16 are pending, with Claims 1-16 amended by the present amendment.

In the Official Action, the specification was objected to; the drawings were objected to; Claims 1-16 were objected to; Claims 15 and 16 were rejected under 35 U.S.C. § 112, first paragraph; Claims 1-16 were rejected under 35 U.S.C. § 112, second paragraph; Claims 1, 15 and 16 were rejected under 35 U.S.C. § 102(e) as being anticipated by Li (U.S. Patent No. 6,301,315); Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Li; and Claims 3-14 were indicated as containing allowable subject matter.

Applicant acknowledges with appreciation the indication of allowable subject matter.

Applicants acknowledge with appreciation the personal interview between the Examiner and Applicants' representative on August 4, 2006. During the interview, the Examiner agreed that amending the claims to replace the terms 'first vector' and 'second vector' with 'real vector' and 'imaginary vector' would overcome the applied reference. The Examiner also agreed that the present amendment to Claim 15 overcame the rejection under 35 U.S.C. § 112, first paragraph.

The specification is amended to comply with 37 C.F.R. § 1.77(b). No new matter is added. Applicant traverses the objection to the Abstract and note that the Abstract was amended in Applicant's Amendment of December 12, 2005.

Figures 1 and 2 are amended to indicate that they represent background art. New Figure 5 is a flowchart corresponding to the method recited in originally filed Claims 1-14. No new matter is added.

A certification of translation together with the translation of FR 0017071 filed on June 13, 2006 are filed herewith.

Claims 1-16 are amended in response to the objections and rejections under 35 U.S.C. § 112. No new matter is added. However, Applicants traverse the suggestion in paragraph 4 of the Official Action to replace the word “for” with the word “to” in line 2 of Claim 1. The claim properly recites that the material is either sent “by” or “for” (i.e., on behalf of) K users. Claims 1-16 are further amended to replace the terms ‘first vector’ and ‘second vector’ with ‘real vector’ and ‘imaginary vector’ as discussed during the interview. Support for this amendment is found in Applicants’ originally filed specification.¹ No new matter is added.

Briefly recapitulating, Claim 1 is directed to a method of processing a received signal. The method includes detecting within the received signal a plurality of possible symbols ($d_k(i)$) transmitted by or for a plurality K of users, each of the plurality of possible symbols belonging to a modulation constellation and being the subject of a spectral spreading by a spreading sequence. The step of detecting includes filtering the received signal, the filtering step adapted for supplying a complex vector characteristic of the received signal. The step of filtering includes decomposing the complex vector into a real vector and an imaginary vector. The step of detecting includes a) searching separately for at least a closest neighbor of the real vector and a closest neighbor of the imaginary vector within a respective real and imaginary lattice of points (Λ, Ω) corresponding to the modulation constellation, and b) estimating the transmitted symbols from components of the closest neighbor of the real vector and the closest neighbor of the imaginary vector so as to produce a vector of estimated symbols.

Li describes systems and methods for mitigating interference on a received signal by providing an equalizer having a truncated response time preceded by a linear filter which compensates for the truncated response time. Li also describes mitigating the interference on a received signal by providing a receiver having a filter, an equalizer with a truncated

¹ Specification, Figures 3-4.

response time and a symbol mapper using a symbol mapping technique that takes advantage of noise correlation produced by the equalizer by adjusting symbol mapping boundaries.

Figure 6 of Li is a block diagram of an equalizer 420 configured to sub-optimally decode symbol estimates using a T-space processor that truncates the impulse response of a received signal. The equalizer includes a filter 610 connected to an estimator 620 via link 612 and a mapping device 630 connected to the estimator 620 via links 622 and 624.² In Li, a system with four symbols can map a symbol vector to a symbol. Different vectors can be mapped to different symbols. Mapping boundaries of an exemplary constellation are the axis of the constellation which form four quadrants representing separate decision spaces for each symbol.³

However, as acknowledged by the Examiner during the interview, Li does not disclose or suggest a) decomposing the complex vector into a real vector and an imaginary vector, b) searching separately for at least a closest neighbor of the real vector and a closest neighbor of the imaginary vector within a respective real and imaginary lattice of points (Λ, Ω) corresponding to the modulation constellation, and c) estimating the transmitted symbol from components of the closest neighbor of the real vector and the closest neighbor of the imaginary vector so as to produce an estimated symbol, as recited in amended Claim 1.

MPEP § 2131 notes that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also MPEP § 2131.02. “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Because Li does not disclose

² Li, column 5, lines 3-10 and Figure 6.

³ Li, column 5, lines 10-21.

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or suggest all the features recited in Claim 1, Li does not anticipate the invention recited in Claim 1, and all claims depending therefrom.

Accordingly, in view of the present amendment and in light of the previous discussion, Applicant respectfully submits that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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